

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s): Dae-Gyun KIM et al. Examiner: MILLER, Brandon J.  
Serial No.: 10/658,483 Group Art Unit: 2617  
Filed: September 9, 2003 Docket: 678-1261 (P10962)  
Dated: August 5, 2009  
For: **METHOD FOR PROVIDING INTERACTIVE DATA SERVICE IN A MOBILE  
COMMUNICATION SYSTEM**

Mail Stop Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313

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Respectfully submitted,

  
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE  
BOARD OF PATENT APPEALS AND INTERFERENCES**

**APPLICANT(S):** KIM, Dae-Gyun et al.

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**APPELLANTS' BRIEF ON APPEAL**

### REAL PARTY IN INTEREST

The real party in interest is Samsung Electronics Co, Ltd, the assignee of the subject application, having an office at 416, Maetan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea.

### RELATED APPEALS AND INTERFERENCES

To the best of Appellant's knowledge and belief, there are no currently pending related appeals, interferences or judicial proceedings.

## STATUS OF CLAIMS

Original Claims 1-27 were filed on September 9, 2003. Claims 1, 9, 16, 18, 20 and 22 were amended, and Claims 19 and 25-27 were cancelled in an Amendment filed August 9, 2007. Claim 28 was newly added in a Submission filed April 1, 2008 in connection with a Request for Continued Examination (RCE). Claims 1, 3, 4, 6, 7, 9, 10, 13, 14, 16-18, 20-23 and 28 were amended in an Amendment filed September 11, 2008. Claim 5 was amended in an Amendment filed April 6, 2009.<sup>1</sup> Thus, Claims 1-18, 20-24 and 28 are pending in the Appeal. Claims 1, 9, 16, 18, 20, 22 and 28 are in independent form. For the purposes of this Appeal, Claims 1-8 stand or fall together, Claims 9-15 stand or fall together, Claims 16 and 17 stand or fall together, Claim 18 stands or falls alone, Claims 20 and 21 stand or fall together, Claims 22-24 stand or fall together, and Claim 28 stands or falls alone.

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<sup>1</sup> It is noted that although Claim 5 was submitted to be amended in the April 2006 Amendment, the Amendment was never entered since the Amendment to Claim 5 was submitted in error. See Examiner's Interview Summary dated April 30, 2009.

### STATUS OF AMENDMENTS

Thus, the Appendix to this Appeal Brief includes Claims 1, 3-7, 9, 10, 13, 14, 16-18, 20-23 and 28, of which the status is indicated as “Previously Presented”; Claims 2, 8, 11, 12, 15 and 24, of which the status is indicated as “Original”; and, Claims 19 and 25-27, of which the status is indicated as “Cancelled”.

## SUMMARY OF CLAIMED SUBJECT MATTER

The invention as recited in Claim 1 relates to a method for providing an interactive broadcast/multicast service for high-speed data transmission between a base station and at least one mobile station in a mobile communication system including the at least one mobile station, the base station communicating with the at least one mobile station, and a server connected to the base station, the server providing data to the at least one mobile station. The method includes transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server, to the at least one mobile station over a forward common channel all mobile stations can receive in common during the interactive broadcast/multicast service (Specification at page 8, lines 19-25) <sup>2</sup>. The method further includes transmitting reverse transmission data according to the interactive broadcast/multicast service over a reverse dedicated channel, by a serviced mobile station, receiving the interactive broadcast/multicast service through the forward common channel during the interactive broadcast/multicast service (Specification at page 8, lines 19-25). In the method the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel (Specification at page 8, lines 15-18).

The invention as recited in Claim 9 relates to a method for providing an interactive broadcast/multicast service for high-speed data transmission between a base station and at least one mobile station in a mobile communication system including a plurality of mobile stations, the base station communicating with the plurality of mobile stations, and a server connected to the base station, the server providing data to the plurality of mobile stations. The method includes upon receiving an interactive broadcast/multicast service request from at least one of the plurality of mobile stations, setting up, by the base station, a connection to the at least one of the plurality of mobile stations and opening a session for the requested interactive broadcast/multicast service between the base station and the server (Specification at page 8, lines 9-10). The method further includes transmitting, by the base station, high-speed data according to the interactive

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<sup>2</sup> Although a citation for each feature of the claims is provided herein, Appellants do not concede the fact that support may be found elsewhere in the written description.

broadcast/multicast service transmitted from the server, to the at least one of the plurality of mobile stations over a forward dedicated channel during the interactive broadcast/multicast service (Specification at page 8, lines 19-25). The method still yet further includes comparing, by the server, a number of the at least one of the plurality of mobile stations requesting the interactive broadcast/multicast service with a predetermined threshold (Specification at page 9, lines 4-18). The method also includes if the number of the at least one of the plurality of mobile stations requesting the interactive broadcast/multicast service is larger than the predetermined threshold, simultaneously transmitting, by the base station, high-speed data to be provided from the server to the at least one of the plurality of mobile stations, to at least one of the plurality of mobile stations over a forward common channel during the interactive broadcast/multicast service, and transmitting reverse transmission data according to the interactive broadcast/multicast service over respective reverse dedicated channels by the at least one of the plurality mobile stations receiving the interactive broadcast/multicast service through the forward common channel during the interactive broadcast/multicast service (Specification at page 9, lines 4-18). In the method the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel (Specification at page 8, lines 15-18).

The invention as recited in Claim 16 relates to a method for releasing an interactive broadcast/multicast service for high-speed data transmission between a base station and a mobile station in a mobile communication system including a plurality of mobile stations, the base station communicating with the plurality of mobile stations, and a server connected to the base station. The method includes transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service to be transmitted from the server to the plurality of mobile stations, to at least one of the plurality of mobile stations over a forward common channel, and transmitting reverse transmission data according to the interactive broadcast/multicast service over respective reverse dedicated channels by at least one of the plurality of mobile stations receiving the interactive broadcast/multicast service through the forward common channel during the interactive broadcast/multicast service (Specification at page 8, lines 15-25). The method further includes comparing, by the server, a number of the at least one of the plurality of mobile stations receiving the interactive broadcast/multicast service with a predetermined threshold, while providing the high-



speed data (Specification at page 9, lines 4-18). The method still yet further includes if the number of the at least one of the plurality of mobile stations receiving the high-speed data provided over the forward common channel is smaller than the threshold, transmitting by the base station high-speed data to be provided from the server to at least one of the plurality of mobile stations requesting the interactive broadcast/multicast service over a forward dedicated channel during the interactive broadcast/multicast service (Specification at page 9, lines 4-18). The method also includes releasing, by the base station, a session opened for the interactive broadcast/multicast service between the base station and the server, if all of the at least one of the plurality of mobile stations receiving the service finish the interactive broadcast/multicast service reception (Specification at page 12, lines 1-10). In the method the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel (Specification at page 8, lines 15-18).

The invention as recited in Claim 18 relates to a method for providing an interactive broadcast/multicast service for high-speed data transmission between a base station and a plurality of mobile stations in a mobile communication system including the plurality of mobile stations, the base station communicating with the plurality of mobile stations, and a server connected to the base station. The method includes upon receiving an interactive broadcast/multicast service request from a first mobile station, setting up, by the base station, a connection to the first mobile station, and shifting a state with the first mobile station to a traffic state (Specification at page 8, lines 9-10). The method further includes opening, by the base station, a session for the requested interactive broadcast/multicast service between the base station and the server, registering the first mobile station in the requested interactive broadcast/multicast service, and shifting the state with the first mobile station to a dormant state (Specification at page 8, lines 9-10). The method still yet further includes upon receiving an interactive broadcast/multicast service request from a second mobile station in the dormant state, paging, by the server, the first mobile station via the base station (Specification at page 8, lines 9-11). The method still yet further includes assigning, by the base station, a forward common channel and a reverse dedicated channel between the base station and the first mobile station (Specification at page 8, lines 11-25). The method also includes transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted

from the server, to the first mobile station over the assigned forward common channel, and transmitting, by the first mobile station, reverse transmission data according to the interactive broadcast/multicast service to be transmitted in a reverse direction over the assigned reverse dedicated channel during the interactive broadcast/multicast service (Specification at page 8, lines 19-25). In the method the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel (Specification at page 8, lines 15-18).

The invention as recited in Claim 20 relates to a method for providing an interactive broadcast/multicast service for high-speed data transmission between a base station and a mobile station in a mobile communication system including the mobile station, the base station communicating with the mobile station, and a server connected to the base station. The method includes setting up, by the base station, a connection to the mobile station and shifting a state with the mobile station to a traffic state, if a data transmission request corresponding to the interactive broadcast/multicast service to the server is received from the mobile station receiving high-speed data provided from the server, from the base station over a forward common channel (Specification at page 8, lines 9-10). The method further includes opening, by the base station, a session for the requested data transmission between the base station and the server (Specification at page 8, lines 9-10). The method still yet further includes assigning, by the base station, a reverse dedicated channel between the base station and the mobile station (Specification at page 8, lines 11-25). The method still yet further includes transmitting, by the mobile station, high-speed data according to the interactive broadcast/multicast service to be transmitted in a reverse direction, over the assigned reverse dedicated channel during the interactive-broadcast/multicast service (Specification at page 8, lines 19-25). In the method the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel (Specification at page 8, lines 15-18).

The invention as recited in Claim 22 relates to a method for providing an interactive broadcast/multicast service for high-speed data transmission between a base station and a mobile station in a mobile communication system including the mobile station, the base station communicating with the mobile station, and a server connected to the base station. The method

includes receiving, by the mobile station, radio resource information for the interactive broadcast/multicast service from the base station (Specification at page 8, lines 9-15). The method further includes sending, by the mobile station, an interactive broadcast/multicast service request to the base station using the received radio resource information (Specification at page 8, lines 9-10). The method still yet further includes setting up, by the base station, a connection to the mobile station, and shifting a state with the mobile station to a traffic state (Specification at page 8, lines 9-11). The method still yet further includes opening, by the base station, a session for the requested interactive broadcast/multicast service between the base station and the server (Specification at page 8, lines 9-10). The method still yet further includes assigning, by the base station, a forward common channel and a reverse dedicated channel between the base station and the mobile station (Specification at page 8, lines 11-25). The method still yet further includes transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service to be provided from the server to the mobile station, to the mobile station over the assigned forward common channel during the interactive broadcast/multicast service (Specification at page 8, lines 19-25). The method still yet further includes transmitting, by the mobile station, reverse transmission data according to the interactive broadcast/multicast service to be provided from the mobile station to the server, to the base station over the assigned reverse dedicated channel during the interactive broadcast/multicast service (Specification at page 8, lines 21-25). In the method the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel (Specification at page 8, lines 15-18).

The invention as recited in Claim 28 relates to a method for providing an interactive broadcast/multicast service for high-speed data transmission between a base station and at least one mobile station in a mobile communication system including the at least one mobile station, the base station communicating with the at least one mobile station, and a server connected to the base station, the server providing data to the at least one mobile station. The method includes transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server that includes at least one segment indicator indicating a segment size of frames used for the high-speed data, to the at least one mobile station over a forward common channel all mobile stations can receive in common during the interactive broadcast/multicast service

(Specification at page 8, lines 19-25). The method further includes transmitting reverse transmission data according to the interactive broadcast/multicast service over a reverse dedicated channel, by a serviced mobile station, receiving the interactive broadcast/multicast service through the forward common channel during the interactive broadcast/multicast service (Specification at page 8, lines 21-25). In the method the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel (Specification at page 8, lines 15-18).

GROUND FOR REJECTION TO BE REVIEWED ON APPEAL

Whether Claims 1-18 and 20-24 under 35 U.S.C. § 103(a) are rendered obvious over U.S. PGPUB 2002/0181423 (Chen) in view of U.S. PGPUB 2003/0087653 (Leung).

Whether Claim 28 under 35 U.S.C. § 103(a) is obvious over U.S. PGPUB 2002/0181423 (Chen) in view of U.S. PGPUB 2003/0087653 (Leung) and U.S. PGPUB 2008/0075099 (Alao).

## ARGUMENT

### 1. Independent Claim 1 is patentable over Chen in view of Leung

Independent Claim 1 was said to be rendered obvious by Chen in view of Leung.<sup>3</sup>

The invention as recited in Claim 1 relates to a method for providing an interactive broadcast/multicast service for high-speed data transmission between a base station and at least one mobile station in a mobile communication system including the at least one mobile station, the base station communicating with the at least one mobile station, and a server connected to the base station, the server providing data to the at least one mobile station. The method includes transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server, to the at least one mobile station over a forward common channel all mobile stations can receive in common during the interactive broadcast/multicast service. The method further includes transmitting reverse transmission data according to the interactive broadcast/multicast service over a reverse dedicated channel, by a serviced mobile station, receiving the interactive broadcast/multicast service through the forward common channel during the interactive broadcast/multicast service. In the method the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel.

Chen discloses a method and apparatus for channel management for point-to-multipoint services in a communication system.<sup>4</sup>

Leung discloses a method and apparatus for data packet transport in a wireless communication system using an Internet protocol.<sup>5</sup>

1 A. The combination of Chen and Leung does not teach or disclose at least the transmission of high-speed data according to an interactive broadcast/multicast service transmitted from a server, and therefore Chen in view of Leung cannot render Claim 1 unpatentable

Claim 1 recites, in part, transmitting, by the base station, high-speed data according to the

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<sup>3</sup> See Office Action dated January 5, 2009 at pages 3-4.

<sup>4</sup> See Chen, at title and abstract.

<sup>5</sup> See Leung, at title and abstract.

interactive broadcast/multicast service transmitted from the server. In Claim 1 of the present application, the server transmits an interactive broadcast/multicast service. An interactive broadcast/multicast service is described in the present specification on page 5, lines 13-30 as follows:

In an interactive data service (or broadcast service) according to the present invention, the PTT server 250 receives information transmitted by a certain one of a plurality of mobile stations via a corresponding base station, and transmits the received information to all mobile stations that can receive data from all base stations. Service data transmitted and received at this time includes various data supporting a multimedia service, such as moving images, still images, audio files, and texts. For information, in a general broadcast service, a start and an end of the service is not controlled by a user, but by a server or a system. Therefore, during a service, a user desiring to receive the service provides only the information about whether the service is received or not, to the server via a base station for accounting. Of course, a particular user is not affected by whether another user receives the service. However, an interactive broadcast or multicast service according to the invention can immediately deliver a user's intention or message to the server during the service. Therefore, in the interactive broadcast service, it is possible to reflect a user's intension in the broadcast contents and deliver a service desired by only a user in a particular group. In addition, because bi-directional transmission is available, only the users belonging to a particular group receive information transmitted by a certain user, thereby enabling information exchange between users.

This interactive broadcast/multicast service is a bi-directional service enabling users to exchange information.

The Examiner has admitted that Chen does not teach or disclose transmitting high-speed data according to the interactive broadcast/ multicast service transmitted from a server as recited in Claim 1 of the present application<sup>6</sup> and cites Leung as allegedly disclosing these features.<sup>7</sup>

The Examiner alleges that in Fig. 5, the Abstract, and paragraphs [0110]-[0111], Leung discloses providing a broadcast service to multiple users from a server and high-speed data

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<sup>6</sup> See Office Action dated January 5, 2009 at pages 3-4.

transmission. It is respectfully submitted that this interpretation of Leung is incorrect.

Leung merely discloses that a Content Server (CS) can provide MSs with broadcast content for a High Speed Broadcast Channel (HSBC). Thus, the content server of Leung only provides broadcast content. Broadcast content is content transmitted only from a content server; there is no interactive feature included in the broadcast content concept. This defect of Leung is clearly illustrated and described in FIG. 6 and its description teaching that all data flows from the source to the end users in a unidirectional manner, and that no interaction occurs from the end users. Unidirectional broadcast content is not and cannot be equated with a bi-directional interactive broadcast/multicast service as recited in Claim 1 of the present application.

Therefore, it is respectfully submitted that neither Chen nor Leung, alone or in combination, teach or disclose that all of the mobile stations can receive high-speed data according to the interactive broadcast/multicast service during the interactive broadcast/multicast service as in Claim 1 of the present application.

Since the combination of Chen and Leung does not teach or disclose the recitation of Claim 1 of the present application, of transmitting high-speed data according to the interactive broadcast/multicast service transmitted from a server, Claim 1 cannot be rendered obvious over Chen in view of Leung.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 1 under 35 U.S.C. §103(a) must be reversed.

**1B. Independent Claim 1 is not rendered obvious by Chen in view of Leung**

The Examiner has failed to show that each and every element of Claim 1, and in as complete detail as is contained therein, are taught in or suggested by the prior art. The Examiner has failed to make out a prima facie case for an obviousness rejection, and thus Claim 1 is allowable.

**1C. Dependent Claims 2-8 are patentable over Chen in view of Leung**

Without conceding the patentability per se of dependent Claims 2-8, these claims are likewise believed to be allowable by virtue of at least their dependence on Claim 1.

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<sup>7</sup> See Office Action dated January 5, 2009 at pages 3-4.



2. Independent Claim 9 is patentable over Chen in view of Leung

Independent Claim 9 was said to be rendered obvious by Chen in view of Leung.<sup>8</sup>

The invention as recited in Claim 9 relates to a method for providing an interactive broadcast/multicast service for high-speed data transmission between a base station and at least one mobile station in a mobile communication system including a plurality of mobile stations, the base station communicating with the plurality of mobile stations, and a server connected to the base station, the server providing data to the plurality of mobile stations. The method includes upon receiving an interactive broadcast/multicast service request from at least one of the plurality of mobile stations, setting up, by the base station, a connection to the at least one of the plurality of mobile stations and opening a session for the requested interactive broadcast/multicast service between the base station and the server. The method further includes transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server, to the at least one of the plurality of mobile stations over a forward dedicated channel during the interactive broadcast/multicast service. The method still yet further includes comparing, by the server, a number of the at least one of the plurality of mobile stations requesting the interactive broadcast/multicast service with a predetermined threshold. The method also includes if the number of the at least one of the plurality of mobile stations requesting the interactive broadcast/multicast service is larger than the predetermined threshold, simultaneously transmitting, by the base station, high-speed data to be provided from the server to the at least one of the plurality of mobile stations, to at least one of the plurality of mobile stations over a forward common channel during the interactive broadcast/multicast service, and transmitting reverse transmission data according to the interactive broadcast/multicast service over respective reverse dedicated channels by the at least one of the plurality mobile stations receiving the interactive broadcast/multicast service through the forward common channel during the interactive broadcast/multicast service. In the method the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel.

Chen discloses a method and apparatus for channel management for point-to-multipoint

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<sup>8</sup> See Office Action dated January 5, 2009 at pages 5-7.

services in a communication system.<sup>9</sup>

Leung discloses a method and apparatus for data packet transport in a wireless communication system using an Internet protocol.<sup>10</sup>

2A. The combination of Chen and Leung does not teach or disclose at least upon receiving an interactive broadcast/multicast service request from at least one of the plurality of mobile stations opening a session for the requested interactive broadcast/multicast service between the base station and the server, and therefore Chen in view of Leung cannot render Claim 9 unpatentable

Claim 9 recites, in part, opening a session for the requested interactive broadcast/multicast service between the base station and the server upon receiving an interactive broadcast/multicast service request from at least one of the plurality of mobile stations.

The Examiner relies on Chen as allegedly disclosing these features.<sup>11</sup> The Examiner alleges that Chen discloses that a “service is initiated when a group is active.”<sup>12</sup> In paragraphs [0048]-[0051], Chen merely discloses that a base station 104 and a controller 110 are connected by backhauls 112. Appellants respectfully submit that at least the sections relied upon by the Examiner do not teach or disclose, for that matter make any reference to, initiating any services, let alone opening a session for the requested interactive broadcast/multicast service between the base station and the server upon receiving an interactive broadcast/multicast service request from at least one of the plurality of mobile stations as recited in Claim 9 of the present application.

Therefore, it is respectfully submitted that neither Chen nor Leung, alone or in combination, teach or disclose opening a session for the requested interactive broadcast/multicast service between the base station and the server upon receiving an interactive broadcast/multicast service request from at least one of the plurality of mobile stations as in Claim 9 of the present application.

Since the combination of Chen and Leung does not teach or disclose the recitation of Claim 9 of the present application, of opening a session for the requested interactive broadcast/multicast service between the base station and the server upon receiving an interactive broadcast/multicast

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<sup>9</sup> See Chen, at title and abstract.

<sup>10</sup> See Leung, at title and abstract.

<sup>11</sup> See Office Action dated January 5, 2009 at page 6.

<sup>12</sup> See Office Action dated January 5, 2009 at page 6.

service request from at least one of the plurality of mobile stations, Claim 9 cannot be rendered obvious over Chen in view of Leung.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 9 under 35 U.S.C. §103(a) must be reversed.

2B. The combination of Chen and Leung does not teach or disclose at least transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server, and therefore Chen in view of Leung cannot render Claim 9 unpatentable

Claim 9 recites, in part, transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server.

Since these features are similar to the features recited in Claim 1, the arguments set forth above in section 1A with respect to Claim 1 also apply to Claim 9.

Therefore, it is respectfully submitted that neither Chen nor Leung, alone or in combination, teach or disclose transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server as in Claim 9 of the present application.

Since the combination of Chen and Leung does not teach or disclose the recitation of Claim 9 of the present application, of transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server, Claim 9 cannot be rendered obvious over Chen in view of Leung.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 9 under 35 U.S.C. §103(a) must be reversed.

2C. The combination of Chen and Leung does not teach or disclose at least comparing, by the server, a number of the at least one of the plurality of mobile stations requesting the interactive broadcast/multicast service with a predetermined threshold, and therefore Chen in view of Leung cannot render Claim 9 unpatentable

Claim 9 recites, in part, comparing, by the server, a number of the at least one of the plurality of mobile stations requesting the interactive broadcast/multicast service with a predetermined

threshold. The Examiner alleges that Leung discloses these features.<sup>13</sup>

In FIGs. 15A, 15B, and 16, and paragraphs [0009], [0012], [0100]-[0111] and [0113]-[0014], Leung merely discloses comparing the number of users demanding data services in a Base Station Controller (BSC) with a predetermined threshold.

Comparing the number of users demanding data services in a Base Station Controller (BSC) with a predetermined threshold of Chen is not and cannot be equated with comparing, by the server, a number of the at least one of the plurality of mobile stations requesting the interactive broadcast/multicast service with a predetermined threshold of Claim 9 of the present application.

Therefore, it is respectfully submitted that neither Chen nor Leung, alone or in combination, teach or disclose comparing, by the server, a number of the at least one of the plurality of mobile stations requesting the interactive broadcast/multicast service with a predetermined threshold as in Claim 9 of the present application.

Since the combination of Chen and Leung does not teach or disclose the recitation of Claim 9 of the present application, of comparing, by the server, a number of the at least one of the plurality of mobile stations requesting the interactive broadcast/multicast service with a predetermined threshold, Claim 9 cannot be rendered obvious over Chen in view of Leung.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 9 under 35 U.S.C. §103(a) must be reversed.

2D. Independent Claim 9 is not rendered obvious by Chen in view of Leung

The Examiner has failed to show that each and every element of Claim 9, and in as complete detail as is contained therein, are taught in or suggested by the prior art. The Examiner has failed to make out a prima facie case for an obviousness rejection, and thus Claim 9 is allowable.

2E. Dependent Claims 10-15 are patentable over Chen in view of Leung

Without conceding the patentability per se of dependent Claims 10-15, these claims are likewise believed to be allowable by virtue of at least their dependence on Claim 9.

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<sup>13</sup> See Office Action dated January 5, 2009 at page 7.

3. Independent Claim 16 is patentable over Chen in view of Leung

Independent Claim 16 was said to be rendered obvious by Chen in view of Leung.<sup>14</sup>

The invention as recited in Claim 16 relates to a method for releasing an interactive broadcast/multicast service for high-speed data transmission between a base station and a mobile station in a mobile communication system including a plurality of mobile stations, the base station communicating with the plurality of mobile stations, and a server connected to the base station. The method includes transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service to be transmitted from the server to the plurality of mobile stations, to at least one of the plurality of mobile stations over a forward common channel, and transmitting reverse transmission data according to the interactive broadcast/multicast service over respective reverse dedicated channels by at least one of the plurality of mobile stations receiving the interactive broadcast/multicast service through the forward common channel during the interactive broadcast/multicast service. The method further includes comparing, by the server, a number of the at least one of the plurality of mobile stations receiving the interactive broadcast/multicast service with a predetermined threshold, while providing the high-speed data. The method still yet further includes if the number of the at least one of the plurality of mobile stations receiving the high-speed data provided over the forward common channel is smaller than the threshold, transmitting by the base station high-speed data to be provided from the server to at least one of the plurality of mobile stations requesting the interactive broadcast/multicast service over a forward dedicated channel during the interactive broadcast/multicast service. The method also includes releasing, by the base station, a session opened for the interactive broadcast/multicast service between the base station and the server, if all of the at least one of the plurality of mobile stations receiving the service finish the interactive broadcast/multicast service reception. In the method the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel.

Chen discloses a method and apparatus for channel management for point-to-multipoint services in a communication system.<sup>15</sup>

Leung discloses a method and apparatus for data packet transport in a wireless

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<sup>14</sup> See Office Action dated January 5, 2009 at pages 9-10.

communication system using an Internet protocol.<sup>16</sup>

3A. The combination of Chen and Leung does not teach or disclose at least transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server, and therefore Chen in view of Leung cannot render Claim 16 unpatentable

Claim 16 recites, in part, transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server.

Since these features are similar to the features recited in Claim 1, the arguments set forth above in section 1A with respect to Claim 1 also apply to Claim 16.

Therefore, it is respectfully submitted that neither Chen nor Leung, alone or in combination, teach or disclose transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server as in Claim 16 of the present application.

Since the combination of Chen and Leung does not teach or disclose the recitation of Claim 16 of the present application, of transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server, Claim 16 cannot be rendered obvious over Chen in view of Leung.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 16 under 35 U.S.C. §103(a) must be reversed.

3B. The combination of Chen and Leung does not teach or disclose at least comparing, by the server, a number of the at least one of the plurality of mobile stations receiving the interactive broadcast/multicast service with a predetermined threshold, and therefore Chen in view of Leung cannot render Claim 16 unpatentable

Claim 16 recites, in part, comparing, by the server, a number of the at least one of the plurality of mobile stations receiving the interactive broadcast/multicast service with a predetermined threshold.

Since these features are similar to the features recited in Claim 9, the arguments set forth above in section 2C with respect to Claim 9 also apply to Claim 16.

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<sup>15</sup> See Chen, at title and abstract.

Therefore, it is respectfully submitted that neither Chen nor Leung, alone or in combination, teach or disclose comparing, by the server, a number of the at least one of the plurality of mobile stations receiving the interactive broadcast/multicast service with a predetermined threshold as in Claim 16 of the present application.

Since the combination of Chen and Leung does not teach or disclose the recitation of Claim 16 of the present application, of comparing, by the server, a number of the at least one of the plurality of mobile stations receiving the interactive broadcast/multicast service with a predetermined threshold, Claim 16 cannot be rendered obvious over Chen in view of Leung.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 16 under 35 U.S.C. §103(a) must be reversed.

3C. Independent Claim 16 is not rendered obvious by Chen in view of Leung

The Examiner has failed to show that each and every element of Claim 16, and in as complete detail as is contained therein, are taught in or suggested by the prior art. The Examiner has failed to make out a prima facie case for an obviousness rejection, and thus Claim 16 is allowable.

3D. Dependent Claim 17 is patentable over Chen in view of Leung

Without conceding the patentability per se of dependent Claim 17, this claim is likewise believed to be allowable by virtue of at least its dependence on Claim 16.

4. Independent Claim 18 is patentable over Chen in view of Leung

Independent Claim 18 was said to be rendered obvious by Chen in view of Leung.<sup>17</sup>

The invention as recited in Claim 18 relates to a method for providing an interactive broadcast/multicast service for high-speed data transmission between a base station and a plurality of mobile stations in a mobile communication system including the plurality of mobile stations, the base station communicating with the plurality of mobile stations, and a server connected to the base station. The method includes upon receiving an interactive broadcast/multicast service request from a first mobile station, setting up, by the base station, a connection to the first mobile station, and

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<sup>16</sup> See Leung, at title and abstract.

shifting a state with the first mobile station to a traffic state. The method further includes opening, by the base station, a session for the requested interactive broadcast/multicast service between the base station and the server, registering the first mobile station in the requested interactive broadcast/multicast service, and shifting the state with the first mobile station to a dormant state. The method still yet further includes upon receiving an interactive broadcast/multicast service request from a second mobile station in the dormant state, paging, by the server, the first mobile station via the base station. The method still yet further includes assigning, by the base station, a forward common channel and a reverse dedicated channel between the base station and the first mobile station. The method also includes transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server, to the first mobile station over the assigned forward common channel, and transmitting, by the first mobile station, reverse transmission data according to the interactive broadcast/multicast service to be transmitted in a reverse direction over the assigned reverse dedicated channel during the interactive broadcast/multicast service. In the method the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel.

Chen discloses a method and apparatus for channel management for point-to-multipoint services in a communication system.<sup>17</sup>

Leung discloses a method and apparatus for data packet transport in a wireless communication system using an Internet protocol.<sup>18</sup>

4A. The combination of Chen and Leung does not teach or disclose at least upon receiving an interactive broadcast/multicast service request from at least one of the plurality of mobile stations opening a session for the requested interactive broadcast/multicast service between the base station and the server, and therefore Chen in view of Leung cannot render Claim 18 unpatentable

Claim 18 recites, in part, opening a session for the requested interactive broadcast/multicast service between the base station and the server upon receiving an interactive broadcast/multicast service request from at least one of the plurality of mobile stations.

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<sup>17</sup> See Office Action dated January 5, 2009 at pages 11-12.

<sup>18</sup> See Chen, at title and abstract.

<sup>19</sup> See Leung, at title and abstract.



Since these features are similar to the features recited in Claim 9, the arguments set forth above in section 2A with respect to Claim 9 also apply to Claim 18.

Therefore, it is respectfully submitted that neither Chen nor Leung, alone or in combination, teach or disclose opening a session for the requested interactive broadcast/multicast service between the base station and the server upon receiving an interactive broadcast/multicast service request from at least one of the plurality of mobile stations as in Claim 18 of the present application.

Since the combination of Chen and Leung does not teach or disclose the recitation of Claim 18 of the present application, of opening a session for the requested interactive broadcast/multicast service between the base station and the server upon receiving an interactive broadcast/multicast service request from at least one of the plurality of mobile stations, Claim 18 cannot be rendered obvious over Chen in view of Leung.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 18 under 35 U.S.C. §103(a) must be reversed.

**4B. Independent Claim 18 is not rendered obvious by Chen in view of Leung**

The Examiner has failed to show that each and every element of Claim 18, and in as complete detail as is contained therein, are taught in or suggested by the prior art. The Examiner has failed to make out a prima facie case for an obviousness rejection, and thus Claim 18 is allowable.

**5. Independent Claim 20 is patentable over Chen in view of Leung**

Independent Claim 20 was said to be rendered obvious by Chen in view of Leung.<sup>20</sup>

The invention as recited in Claim 20 relates to a method for providing an interactive broadcast/multicast service for high-speed data transmission between a base station and a mobile station in a mobile communication system including the mobile station, the base station communicating with the mobile station, and a server connected to the base station. The method includes setting up, by the base station, a connection to the mobile station and shifting a state with the mobile station to a traffic state, if a data transmission request corresponding to the interactive broadcast/multicast service to the server is received from the mobile station receiving high-speed

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<sup>20</sup> See Office Action dated January 5, 2009 at pages 12-13.

data provided from the server, from the base station over a forward common channel. The method further includes opening, by the base station, a session for the requested data transmission between the base station and the server. The method still yet further includes assigning, by the base station, a reverse dedicated channel between the base station and the mobile station. The method still yet further includes transmitting, by the mobile station, high-speed data according to the interactive broadcast/multicast service to be transmitted in a reverse direction, over the assigned reverse dedicated channel during the interactive-broadcast/multicast service. In the method the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel.

Chen discloses a method and apparatus for channel management for point-to-multipoint services in a communication system.<sup>21</sup>

Leung discloses a method and apparatus for data packet transport in a wireless communication system using an Internet protocol.<sup>22</sup>

5A. The combination of Chen and Leung does not teach or disclose at least opening a session for the requested interactive broadcast/multicast service between the base station and the server, and therefore Chen in view of Leung cannot render Claim 20 unpatentable

Claim 20 recites, in part, opening a session for the requested interactive broadcast/multicast service between the base station and the server.

Since these features are similar to the features recited in Claim 9, the arguments set forth above in section 2A with respect to Claim 9 also apply to Claim 20.

Therefore, it is respectfully submitted that neither Chen nor Leung, alone or in combination, teach or disclose opening a session for the requested interactive broadcast/multicast service between the base station and the server as in Claim 20 of the present application.

Since the combination of Chen and Leung does not teach or disclose the recitation of Claim 20 of the present application, of opening a session for the requested interactive broadcast/multicast service between the base station and the server, Claim 20 cannot be rendered obvious over Chen in view of Leung.

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<sup>21</sup> See Chen, at title and abstract.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 20 under 35 U.S.C. §103(a) must be reversed.

**5B. Independent Claim 20 is not rendered obvious by Chen in view of Leung**

The Examiner has failed to show that each and every element of Claim 20, and in as complete detail as is contained therein, are taught in or suggested by the prior art. The Examiner has failed to make out a prima facie case for an obviousness rejection, and thus Claim 20 is allowable.

**5C. Dependent Claim 21 is patentable over Chen in view of Leung**

Without conceding the patentability per se of dependent Claim 21, this claim is likewise believed to be allowable by virtue of at least its dependence on Claim 20.

**6. Independent Claim 22 is patentable over Chen in view of Leung**

Independent Claim 22 was said to be rendered obvious by Chen in view of Leung.<sup>23</sup>

The invention as recited in Claim 22 relates to a method for providing an interactive broadcast/multicast service for high-speed data transmission between a base station and a mobile station in a mobile communication system including the mobile station, the base station communicating with the mobile station, and a server connected to the base station. The method includes receiving, by the mobile station, radio resource information for the interactive broadcast/multicast service from the base station. The method further includes sending, by the mobile station, an interactive broadcast/multicast service request to the base station using the received radio resource information. The method still yet further includes setting up, by the base station, a connection to the mobile station, and shifting a state with the mobile station to a traffic state. The method still yet further includes opening, by the base station, a session for the requested interactive broadcast/multicast service between the base station and the server. The method still yet further includes assigning, by the base station, a forward common channel and a reverse dedicated channel between the base station and the mobile station. The method still yet further includes transmitting, by the base station, high-speed data according to the interactive broadcast/multicast

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<sup>22</sup> See Leung, at title and abstract.

service to be provided from the server to the mobile station, to the mobile station over the assigned forward common channel during the interactive broadcast/multicast service. The method still yet further includes transmitting, by the mobile station, reverse transmission data according to the interactive broadcast/multicast service to be provided from the mobile station to the server, to the base station over the assigned reverse dedicated channel during the interactive broadcast/multicast service. In the method the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel.

Chen discloses a method and apparatus for channel management for point-to-multipoint services in a communication system.<sup>24</sup>

Leung discloses a method and apparatus for data packet transport in a wireless communication system using an Internet protocol.<sup>25</sup>

6A. The combination of Chen and Leung does not teach or disclose at least opening a session for the requested interactive broadcast/multicast service between the base station and the server, and therefore Chen in view of Leung cannot render Claim 22 unpatentable

Claim 22 recites, in part, opening a session for the requested interactive broadcast/multicast service between the base station and the server.

Since these features are similar to the features recited in Claim 9, the arguments set forth above in section 2A with respect to Claim 9 also apply to Claim 22.

Therefore, it is respectfully submitted that neither Chen nor Leung, alone or in combination, teach or disclose opening a session for the requested interactive broadcast/multicast service between the base station and the server as in Claim 22 of the present application.

Since the combination of Chen and Leung does not teach or disclose the recitation of Claim 22 of the present application, of opening a session for the requested interactive broadcast/multicast service between the base station and the server, Claim 22 cannot be rendered obvious over Chen in view of Leung.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 22

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<sup>23</sup> See Office Action dated January 5, 2009 at pages 13-15.

<sup>24</sup> See Chen, at title and abstract.

<sup>25</sup> See Leung, at title and abstract.

under 35 U.S.C. §103(a) must be reversed.

6B. The combination of Chen and Leung does not teach or disclose at least transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server, and therefore Chen in view of Leung cannot render Claim 22 unpatentable

Claim 22 recites, in part, transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server.

Since these features are similar to the features recited in Claim 1, the arguments set forth above in section 1A with respect to Claim 1 also apply to Claim 22.

Therefore, it is respectfully submitted that neither Chen nor Leung, alone or in combination, teach or disclose transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server as in Claim 22 of the present application.

Since the combination of Chen and Leung does not teach or disclose the recitation of Claim 22 of the present application, of transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server, Claim 22 cannot be rendered obvious over Chen in view of Leung.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 22 under 35 U.S.C. §103(a) must be reversed.

6C. Independent Claim 22 is not rendered obvious by Chen in view of Leung

The Examiner has failed to show that each and every element of Claim 22, and in as complete detail as is contained therein, are taught in or suggested by the prior art. The Examiner has failed to make out a prima facie case for an obviousness rejection, and thus Claim 22 is allowable.

6D. Dependent Claims 23 and 34 are patentable over Chen in view of Leung

Without conceding the patentability per se of dependent Claims 23 and 24, these claims are likewise believed to be allowable by virtue of at least their dependence on Claim 22.

7. Independent Claim 28 is patentable over Chen in view of Leung and Alao

Independent Claim 28 was said to be rendered obvious by Chen in view of Leung and Alao.<sup>26</sup>

The invention as recited in Claim 28 relates to a method for providing an interactive broadcast/multicast service for high-speed data transmission between a base station and at least one mobile station in a mobile communication system including the at least one mobile station, the base station communicating with the at least one mobile station, and a server connected to the base station, the server providing data to the at least one mobile station. The method includes transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server that includes at least one segment indicator indicating a segment size of frames used for the high-speed data, to the at least one mobile station over a forward common channel all mobile stations can receive in common during the interactive broadcast/multicast service. The method further includes transmitting reverse transmission data according to the interactive broadcast/multicast service over a reverse dedicated channel, by a serviced mobile station, receiving the interactive broadcast/multicast service through the forward common channel during the interactive broadcast/multicast service. In the method the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel.

Chen discloses a method and apparatus for channel management for point-to-multipoint services in a communication system.<sup>27</sup>

Leung discloses a method and apparatus for data packet transport in a wireless communication system using an Internet protocol.<sup>28</sup>

Alao discloses a service gateway for interactive television.<sup>29</sup>

7A. The combination of Chen, Leung and Alao does not teach or disclose at least transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server, and therefore Chen in view of Leung and Alao cannot render Claim 28 unpatentable

Claim 28 recites, in part, transmitting, by the base station, high-speed data according to the

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<sup>26</sup> See Office Action dated January 5, 2009 at pages 15-17.

<sup>27</sup> See Chen, at title and abstract.

<sup>28</sup> See Leung, at title and abstract.

<sup>29</sup> See Alao, at title and abstract.

interactive broadcast/multicast service transmitted from the server.

Since these features are similar to the features recited in Claim 1, the arguments set forth above in section 1A with respect to Claim 1 also apply to Claim 28.

Alao does not cure any of the defects of Chen and Leung.

Therefore, it is respectfully submitted that neither Chen nor Leung nor Alao, alone or in combination, teach or disclose transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server as in Claim 28 of the present application.

Since the combination of Chen, Leung and Alao does not teach or disclose the recitation of Claim 28 of the present application, of transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server, Claim 28 cannot be rendered obvious over Chen in view of Leung and Alao.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 28 under 35 U.S.C. §103(a) must be reversed.

**7B. Independent Claim 28 is not rendered obvious by Chen in view of Leung and Alao**

The Examiner has failed to show that each and every element of Claim 28, and in as complete detail as is contained therein, are taught in or suggested by the prior art. The Examiner has failed to make out a prima facie case for an obviousness rejection, and thus Claim 28 is allowable.

## CONCLUSION


As the Examiner has failed to make out a prima facie case for an obviousness rejection, the rejection of Claims 1, 3-7, 9, 10, 13, 14, 16-18, 20-23 and 28 must be reversed.

It is well settled that in order for a rejection under 35 U.S.C. §103(a) to be appropriate, the claimed invention must be shown to be obvious in view of the prior art as a whole. A claim may be found to be obvious if it is first shown that all of the recitations of a claim are taught in the prior art or are suggested by the prior art. In re Royka, 490 F.2d 981, 985, 180 U.S.P.Q. 580, 583 (C.C.P.A. 1974), cited in M.P.E.P. §2143.03.

The Examiner has failed to show that all of the recitations of Claims 1, 3-7, 9, 10, 13, 14, 16-18, 20-23 are taught or suggested by Chen in view of Leung, and has failed to show that all of the recitations of Claim 28 are taught or suggested by Chen in view of Leung and Alao. Accordingly, the Examiner has failed to make out a prima facie case for an obviousness rejection.

Therefore, the rejections of Claims 1, 3-7, 9, 10, 13, 14, 16-18, 20-23 and 28 must be reversed.

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## CLAIMS APPENDIX

1. (Previously Presented) A method for providing an interactive broadcast/multicast service for high-speed data transmission between a base station and at least one mobile station in a mobile communication system including the at least one mobile station, the base station communicating with the at least one mobile station, and a server connected to the base station, the server providing data to the at least one mobile station, the method comprising the steps of:

transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server, to the at least one mobile station over a forward common channel all mobile stations can receive in common during the interactive broadcast/multicast service; and

transmitting reverse transmission data according to the interactive broadcast/multicast service over a reverse dedicated channel, by a serviced mobile station, receiving the interactive broadcast/multicast service through the forward common channel during the interactive broadcast/multicast service,

wherein the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel.

2. (Original) The method of claim 1, wherein the base station provides a broadcast service through the forward common channel.

3. (Previously Presented) The method of claim 1, wherein the base station transmits to the at least one mobile station assignment information of a multicast fundamental channel for transmitting forward broadcast information, assignment information of a common assignment channel for transmitting a response message for reverse data, assignment information of the CPCCH for transmitting power control information of the reverse dedicated channel, and assignment information for identifying the serviced mobile station and assigning a reverse power control channel.

4. (Previously Presented) The method of claim 3, wherein the base station transmits reverse

power control information to the at least one mobile station over the CPCCH.

5. (Previously Presented) The method of claim 3, wherein the serviced mobile station transmits a power control bit to the base station over the reverse dedicated channel as power control information for one of the CPCCH, a forward dedicated control channel, and the common assignment channel.

6. (Previously Presented) The method of claim 1, further comprising the step of transmitting, from the base station to the at least one mobile station, reverse power control information via the CPCCH and forward data via a forward dedicated control channel.

7. (Previously Presented) The method of claim 1, further comprising the step of transmitting, from the base station to the at least one mobile station reverse power control information via the CPCCH and a control message to be delivered to a particular mobile station or a response message for reverse data via a time-sharing common assignment channel or dedicated control channel.

8. (Original) The method of claim 1, further comprising the step of setting up, from the mobile station to the base station, a reverse fundamental channel, a dedicated control channel, and a supplemental channel.

9. (Previously Presented) A method for providing an interactive broadcast/multicast service for high-speed data transmission between a base station and at least one mobile station in a mobile communication system including a plurality of mobile stations, the base station communicating with the plurality of mobile stations, and a server connected to the base station, the server providing data to the plurality of mobile stations, the method comprising the steps of:

upon receiving an interactive broadcast/multicast service request from at least one of the plurality of mobile stations, setting up, by the base station, a connection to the at least one of the plurality of mobile stations and opening a session for the requested interactive broadcast/multicast service between the base station and the server;

transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server, to the at least one of the plurality of mobile stations over a forward dedicated channel during the interactive broadcast/multicast service;

comparing, by the server, a number of the at least one of the plurality of mobile stations requesting the interactive broadcast/multicast service with a predetermined threshold; and

if the number of the at least one of the plurality of mobile stations requesting the interactive broadcast/multicast service is larger than the predetermined threshold, simultaneously transmitting, by the base station, high-speed data to be provided from the server to the at least one of the plurality of mobile stations, to at least one of the plurality of mobile stations over a forward common channel during the interactive broadcast/multicast service, and transmitting reverse transmission data according to the interactive broadcast/multicast service over respective reverse dedicated channels by the at least one of the plurality of mobile stations receiving the interactive broadcast/multicast service through the forward common channel during the interactive broadcast/multicast service,

wherein the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel.

10. (Previously Presented) The method of claim 9, wherein the base station provides a broadcast service through the forward common channel.

11. (Original) The method of claim 9, wherein the base station transmits information for changing a forward data transmission channel from a dedicated channel to a common channel and a handoff direction message, to the at least one of the plurality of mobile stations.

12. (Original) The method of claim 11, wherein the handoff direction message includes multicast fundamental channel assignment information, common assignment channel assignment information for transmitting a response message for reverse data, common power control channel assignment information for transmitting power control information of a reverse dedicated channel, and information for identifying the mobile station requesting the service and assigning a reverse power control channel.

13. (Previously Presented) The method of claim 11, wherein the base station transmits reverse power control information to the at least one of the plurality of mobile stations over the CPCCH.

14. (Previously Presented) The method of claim 12, wherein the mobile station requesting the service transmits a power control bit to the base station over a reverse dedicated channel as power control information for one of the CPCCH, a forward dedicated control channel, and a common assignment channel.

15. (Original) The method of claim 9, wherein the base station transmits to the at least one of the plurality of mobile stations a release command message for changing a data transmission channel from the base station to the mobile station, from a dedicated channel to a common channel.

16. (Previously Presented) A method for releasing an interactive broadcast/multicast service for high-speed data transmission between a base station and a mobile station in a mobile communication system including a plurality of mobile stations, the base station communicating with the plurality of mobile stations, and a server connected to the base station, comprising the steps of:

transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service to be transmitted from the server to the plurality of mobile stations, to at least one of the plurality of mobile stations over a forward common channel, and transmitting reverse transmission data according to the interactive broadcast/multicast service over respective reverse dedicated channels by at least one of the plurality of mobile stations receiving the interactive broadcast/multicast service through the forward common channel during the interactive broadcast/multicast service;

comparing, by the server, a number of the at least one of the plurality of mobile stations receiving the interactive broadcast/multicast service with a predetermined threshold, while providing the high-speed data;

if the number of the at least one of the plurality of mobile stations receiving the high-speed

data provided over the forward common channel is smaller than the threshold, transmitting by the base station high-speed data to be provided from the server to at least one of the plurality of mobile stations requesting the interactive broadcast/multicast service over a forward dedicated channel during the interactive broadcast/multicast service; and

releasing, by the base station, a session opened for the interactive broadcast/multicast service between the base station and the server, if all of the at least one of the plurality of mobile stations receiving the service finish the interactive broadcast/multicast service reception,

wherein the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel.

17. (Previously Presented) The method of claim 16, wherein the base station provides a broadcast service through the forward common channel.

18. (Previously Presented) A method for providing an interactive broadcast/multicast service for high-speed data transmission between a base station and a plurality of mobile stations in a mobile communication system including the plurality of mobile stations, the base station communicating with the plurality of mobile stations, and a server connected to the base station, comprising the steps of:

upon receiving an interactive broadcast/multicast service request from a first mobile station, setting up, by the base station, a connection to the first mobile station, and shifting a state with the first mobile station to a traffic state;

opening, by the base station, a session for the requested interactive broadcast/multicast service between the base station and the server, registering the first mobile station in the requested interactive broadcast/multicast service, and shifting the state with the first mobile station to a dormant state;

upon receiving an interactive broadcast/multicast service request from a second mobile station in the dormant state, paging, by the server, the first mobile station via the base station;

assigning, by the base station, a forward common channel and a reverse dedicated channel between the base station and the first mobile station; and

transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server, to the first mobile station over the assigned forward common channel, and transmitting, by the first mobile station, reverse transmission data according to the interactive broadcast/multicast service to be transmitted in a reverse direction over the assigned reverse dedicated channel during the interactive broadcast/multicast service,

wherein the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel.

19 (Canceled)

20. (Previously Presented) A method for providing an interactive broadcast/multicast service for high-speed data transmission between a base station and a mobile station in a mobile communication system including the mobile station, the base station communicating with the mobile station, and a server connected to the base station, comprising the steps of:

setting up, by the base station, a connection to the mobile station and shifting a state with the mobile station to a traffic state, if a data transmission request corresponding to the interactive broadcast/multicast service to the server is received from the mobile station receiving high-speed data provided from the server, from the base station over a forward common channel;

opening, by the base station, a session for the requested data transmission between the base station and the server;

assigning, by the base station, a reverse dedicated channel between the base station and the mobile station; and

transmitting, by the mobile station, high-speed data according to the interactive broadcast/multicast service to be transmitted in a reverse direction, over the assigned reverse dedicated channel during the interactive-broadcast/multicast service,

wherein the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel.

21. (Previously Presented) The method of claim 20, wherein the base station provides a

broadcast service through the forward common channel.

22. (Previously Presented) A method for providing an interactive broadcast/multicast service for high-speed data transmission between a base station and a mobile station in a mobile communication system including the mobile station, the base station communicating with the mobile station, and a server connected to the base station, comprising the steps of:

receiving, by the mobile station, radio resource information for the interactive broadcast/multicast service from the base station;

sending, by the mobile station, an interactive broadcast/multicast service request to the base station using the received radio resource information;

setting up, by the base station, a connection to the mobile station, and shifting a state with the mobile station to a traffic state;

opening, by the base station, a session for the requested interactive broadcast/multicast service between the base station and the server;

assigning, by the base station, a forward common channel and a reverse dedicated channel between the base station and the mobile station;

transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service to be provided from the server to the mobile station, to the mobile station over the assigned forward common channel during the interactive broadcast/multicast service; and

transmitting, by the mobile station, reverse transmission data according to the interactive broadcast/multicast service to be provided from the mobile station to the server, to the base station over the assigned reverse dedicated channel during the interactive broadcast/multicast service,

wherein the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel.

23. (Previously Presented) The method of claim 22, wherein the base station provides a broadcast service through the forward common channel.

24. (Original) The method of claim 22, wherein the radio resource information comprises

logical-to-physical mapping (LPM) information, multiplexing rule information, and multicast service reference identifier (MSR\_ID) information according to multicast fundamental channels (M-FCH).

25-27 (Canceled)

28. (Previously Presented) A method for providing an interactive-broadcast/multicast service for high-speed data transmission between a base station and at least one mobile station in a mobile communication system including the at least one mobile station, the base station communicating with the at least one mobile station, and a server connected to the base station, the server providing data to the at least one mobile station, the method comprising the steps of:

transmitting, by the base station, high-speed data according to the interactive broadcast/multicast service transmitted from the server that includes at least one segment indicator indicating a segment size of frames used for the high-speed data, to the at least one mobile station over a forward common channel all mobile stations can receive in common during the interactive broadcast/multicast service; and

transmitting reverse transmission data according to the interactive broadcast/multicast service over a reverse dedicated channel, by a serviced mobile station, receiving the interactive broadcast/multicast service through the forward common channel during the interactive broadcast/multicast service,

wherein the base station assigns a common power control channel (CPCCH) to the at least one mobile station to control power of the reverse dedicated channel.



## **EVIDENCE APPENDIX**

There is no evidence submitted pursuant to 37 C.F.R. 1.130, 1.131, 1.132 or entered by the Examiner and relied upon by Appellant.

## **RELATED PROCEEDINGS APPENDIX**

There are no known decisions rendered by a court or the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 C.F.R. 41.37.